54 TAC	108 CCT	162 TGC	216 CAT	270 GTC	324 TCC	378 AAT N	132 3AC
		GTG		GAC	ICT 1	VTC A	TA C
GGA	ATA	AGA	3AC	CTA (AC 1	TA P	7 0 0 0
45 CAA GGA ATT	99 AAG ATA ATA	153 ATC /	207 TCT GAC ACT	261 TCA (315 CGA CAC TCT	69 AG G	23 AA G A
	GTG	ATT	CAG			ACC A	CA GA
GAG	AAT (TCC 7	GTT (AAA GGC	AG A	TC A	TG A
36 AAG GAG TGG	90 CAA AAT	144 GTG	198 TGT (252 AGA 1	306 AGC (160 2CC A	114 CT G
၁၉	CAA	TAT (GAA		7 221	300 O	TG O
ATA	ATA	CAC '		GAC AGG	STT 1	3AG (
27 : AGG ATA GGC A	81 AAT ATA CAA	135 AGA	189 ATA TCC	243 AAA (297 GAA GTT TCC AGC CAG AGA	351 360 369 ATG ACA ATT GAG GCG CCC ATC ACC AAG GTA ATC M T I E A P I T K V I	405 414 423 432 AGT CCC ATG CCT GTG ACA GAC CTA GAC S P M P V T E A L D
ATC	GAT	ATT			ACT	ACA I	AGT 1
18 TCA TGC ATC	GGA	AAA	GAG AAA	AAA CAT	GCA	ATG ,	396 GCT GCC CAG GAA AGT A A Q E S
18 TCA	72 AAC	126 GGA	180 GCT	234 GGC	288 CGT	342 TCC	396 CAG (Q 1
ATA AAT	AAG AAA	GGA	AAG	ACA	TCC	342 TA CAT TCC H S)) (V
ATA	AAG	CAG	AAT	CAG	၁၁၅	ATA	GCT
9 ACT	63 AAA	117 GGA	171 AAC	225 AAT	279 GTT	333 CGG R	387 4AT N
GAT	၁၁၅	ATT	၁၅၅	ACA GAT		30CC	ATC
9 NNC GAT ACT	TAT	GTC	AAT	ACA	AAA GCT	333 ATG GCC CGG M A R	ATT ATC I
5 '					•		·

FIGURE 1A

Docket No.: PF-0057-4 CON

Inventors: Au-Young et al.

Title: CyclicNucleotide Phosphodiesterases
Serial No.: To Be Determined

92 T.	0 H	4 D	∞ ∢	0 v	ဖ (၁)	0.4
486 GCT A	540 GGT G	594 ATG M		702 GAG E	756 CGC R	810 TTA L
GGT		CAA	CGG R	CTG L	GCT A	TGG W
ITT F	TCT S	ACT	CCA P	GAA E	TYYY F	TCA
	531 ATG M				747 ATG M	801 AGA R
CCA P	TTA L	AAA K	GTC V	ATT I	AAA K	CTA L
TCA	၁၅၅	ACA T	GAT D	GAT D	CTC	ACG
468 TAT Y	522 GGG G	576 TCA S	630 GAT D	684 I'I'I F	738 3GT 3	792 I'CA S
TTA L	GTT V	CTT	CTT L	GAC D	CTT	GAG
GAG E	CIT	GTT V	TCC	TGG W	TAT Y	TCC
459 ACT T	513 GAC D	567 TAT Y	621 ATC I	675 TAC Y	729 ATT I	783 TGC C
ACC	AAT N		CCC	GAA E	${ m TMG}_{ m L}$	CAC H
AGA R	GCC			GAG	CCT P	TTA L
450 CTA L	504 CAT H	558 GGG G	612 ATC I	666 AAT N	720 AGG R	774 TTC F
ATT I	GAT CCC D P	TCA	ATA I	GAA E	AAT N	GAA E
GAA E	GAT D	CTA L	AAT N	ATG M	CAC H	TGT
441 CTC	495 GAT D	549 AGA R	603 AGC S	657 GCC A	711 ACC T	765 ATC I
CGT GTG R V	GAT D	CGA R	TCA	CGG R	GCC ▶	GGA G
CGT R	AAA K	TYG	GTT V	GCT A	GTT V	TTT F

864 CAT H	918 AAG K	927 936 945 954 963 972 TTA GAT CAT GREGIC GCT GCA CTC ATC GCA GCC ACC ATT CAT L D P I D E V A A L I A A T I H	1026 GAG E	1080 TTG L	.134 GAG E	188 ACA T
ACA T	ATA I	ATT I	AGT	ecc P	J ATG M	GCC A
TCT S	AGG R	ACC	GGA G	GCG	AAC N	TYTA
855 AAT N	909 GAG E	963 GCC A	1017 GCT A	1071 CAT H	125 AAA K	179 GTC V
CAC H	AAG K	GCA	AAT	CAC H	1 TYT F	1 ATG M
TAC	TCC	ATC	TGT	AGC	ATA I	GAC D
846 CCC P	900 CTC L	954 CTC L	1008 CTG L	.062 GAG E	116 AAT N	170 ATC I
AAT N	TYYY F	GCA	TTC	CTG L	TGC C	1 ATT I
TCC	TAT Y	GCT A	TCC	GTG V	AAA K	999 9
837 TCC S	891 GCC A	945 GTC V	999 AAC N	1053 GCT A	.107 GAT D	161 CAG Q
CAT H	ACT	GAG	ACC T	ACT T	J GAT D	1 CGC R
TAT Y	gcc A	GAT D	AGA R	GAC D	GGA G	CTG L
828 AAT N	882 CAT H	936 AIT I	990 GGG G	.044 AAT N	.098 ACT T	152 ACA T
GCC	CIT	CÇA P	CCT	TAC Y	ACC	cGG R
GAA	GTG V	GAT D	CAC H	TMG	CTG L	TAT Y
819 ATC I	873 GAT D	927 TTA L		.035 ATT I	1089 CAG Q	.143 GAT D
ATT I	GCT	ACT	GTG V	GCC A	1 TTC F	1 AAT N
819 CAA ATT ATC Q I I	TCT	927 GAA ACT TTA E T L	GAT GTG D V	1035 CTG GCC ATT L A I	GCC A	1143 AGG AAT GAT ' R N D
					•	

FIGURE 10

1242	AAA K	1251 1260 1269 1278 1287 1296 CCC TTG GCA ACT GAA AAT GGG GAA ACT GAT AAA AAC CAG GAA GTG ATA P L A T L E E N G E T D K N Q E V I	1350 ATT I	1404 TGG W	1458 CAG Q	.512 AAA K	.566 GAT D
	AAC N	GTG V	CTG	GAG E	CAG Q	CCC P	1 TGG W
	ATC I	GAA E	ATG M	ATC I	AAG	ATC I	GCT A
1233	S S	1287 CAG Q	1341 CGA R	1395 TGC C	1449 GAG E	1503 AGC S	1557 GAT D
	AAC N	AAC	AAA K	TAC Y	GAA E	TGC	TYPYF
,	GTC V	AAA K	ATC I	CAG Q	GAT D.	ACC	ATG M
1224	TTT F	1278 GAT D	1332 CTA L	1386 CTG L	1440 ACT T	1494 AAT N	1548 GAC D
	AAA K	ACT	ACC		CAG	AGA R	ACA T
	AAC N	GAA E	CGG R	CGA R	TCT	GAC D	ATC I
1215	GTC V	1269 GGG G	1323 AAC N	1377 TGC C	1431 TTT F	1485 TTT F	1539 TTC F
	CAT H	AAT	GAG E	, , , ,	TAT Y	GTG V	TAC Y
	GAG E	GAA	CCA P	AAT	GAA E	CCA P	GAT D
1206	TrIT F	1260 Gaa E	1314 ACT T	1368 TCC S	1422 GAA E	1476 ATG M	.530 ATT I
•	CAC H	CTA	AGG R	GTG V	TCG S	GTG V	1 TYC F
	AGG R	ACA	CIT	GAT D	ATT I	GTG V	TCT
1197	ACA T	1251 GCA A	1305 ATG M	1359 GCT A	.413 CGC R	.467 CCT P	.521 ATC I
•	ATG M	TTG	ACT T	TGT C	GCA A	TTA L	CAA Q
	GAA E	CCC	AAC N	AAA K	GCT A	ე ე	TCC

GURE 1D

Docket No.: PF-0057-4 CON Inventors: Au-Young et al. Title: CyclicNucleotide Phosphodiesterases Serial No.: To Be Determined

1620 AAA TAC <	1674 3AA TAG 3	1728 3AA TTC	1782 AG CCC	1836 CA GCC	1890 GC CTK	1944 TT TCT
Tepp 7	CCT C	TTG	ANA C	TCT K	CTG G	TCA G
1611 AAC AAC N N	1665 CCA CCT	1719 3GT CAT	1773 3GC 'AGN	1827 'AA CCT	1881 GT ARC	1935 TT SGC
GAC A	CGA C	TTC	CWA G	CAG T	CMC T	GGN T
1602 CAT CTT H L	1656 AAC CTC N L	1710 TGT TCC	1764 TCA GTR	1818 GGA CAT	1872 CTT GGC	1926 3AC CAC
CAG Q	CGG R	CTT	CIL	990	AGA (KAG (
1593 TTA ATG L M	1647 AAG CTG K L	. 1701 CTG AAG	1755 TYG GTC	1809 AGC CCR	1863 CAA GTG	1917 3CA CAT
GAT D	ATG	သဗ္ဗ	TCC	GAA	TCT	AAG
1584 1593 1602 1611 1620 GAC CTG CCT GAT TTA ATG CAG CAT CTT GAC AAC AAC TTT AAA TAC D L P D L M Q H L D N N F K Y	1638 1647 1656 1665 1674 CTG GAC GAA ATG AAG CTG CGG AAC CTC CGA CCT CCT GAA TAG L D E M K L R N L R P P E	1728 1719 1719 1728 1728 1728 CCA CCC AGA GCC CTG AAG CTT TGT TCC TTC GGT CAT TTG GAA TTC	1746 1755 1764 1773 1782 RAC CAG AGC TCC TTG GTC CTT TCA GTR CWA GGC AGN ANA CAG CCC	1800 1809 1818 1827 1836 ATA GCC TGT GAA AGC CCR CGG GGA CAT CAG TAA CCT TCT KCA GCC	1854 1863 1872 1881 1890 TGC CAT TAC TGT CAA GTG AGA CTT GGC CMC TGT ARC CTG GGC CTK	1908 1917 1926 1935 1944 CTC TTC AGA AAG GCA CAT KAG GAC CAC GGN TTT SGC TCA GTT TCT
1575 GCC TTT GTA A F V	1629 TGG AAA GGA W K G	1683 TGG GAG ACA	1737 CTG AGG GCA	1791 CCG ATC TGY	1845 ACC ATC CAA	1899 CTK CAG GAG

FIGURE 11

1998	2043 2052	2079 2088 2097 2106	2151 2160	
ICT TCC TKC	TAC GTT CAA CAC TTA	ATC TTT AAC AAC TTT TTC ACA TCA NAG NAG GTT	TTT TAA AAT TGA GTA	
1989	2043	2097	2151	CCC N 3.
TGA TGG A	TAC GTT C	ACA TCA N	TTT TAA A	
TAT	ANT	TTC	CTC	NAT
1980	2034	2088	2142	2196
MAA GGG	TCT CTC	AAC TYY	TGA CTT	TAT TAA
TGC	AAT	AAC	GAG	GAT
1971 AG TKC CCC	2016 2025 2034 ATG TCT ATT TCC AAC AAT TCT CTC ANT		2133 AC NAC TGA	2187 2196 TT GGA CTT GAT TAT TAA NAT
1962 1971 1980 1989 1998	2016	2070	2124 2133 2142	2178
CAA GGT CTG GAG TKC CCC TGC MAA GGG TAT TGA TGG ACT TCC TKC	AGC ATG TCT A	AAT GGC AAT AGG	ACT TGG GNA CAC NAC TGA GAG TGA CTT CTC	AAA ATA AAA TYT
1953	2007	2061	2115	2169
GGT AAA ACA C	CAG TGA CAG A	AGA ACG GCT A	CAA TCG CTC A	ACA GAT GGA A

FIGURE 1F

	AAC N	108 ATT I	162 TGG W	216 CAG Q	
	TGC	ATG	GAA E	AGA R	
	GAA E	ATG M	ATT I	A.A.G K	
45	TGT	99 NGC X	153 TGC C	207 GAG E	
	3AC D	AAA ^	ST:	, AA	
	AGC S	ATC I	GAC D	GAT D	
36	၁၁၁၁	90 CTG ATC A	144 TTG L	198 ACT T	
	E PA	ATC	$\mathcal{S}_{\mathcal{S}_{\mathbf{q}}}$	AG.	'n
	ATT I	81 GNA AAC CAA 1 X N Q 1	CGA R	GCA A	GAC
27	GAG	81 AAC N	135 TGC C	189 TTT F	243 TTT F
	GCT A	GNA	CCA P	TAT Y	GTG V
	GCA A	72 TYC CCT (F P }	AAC	GAG E	NCA X
18	ATG M	72 TTC F	126 GNC X	180 GAG E	234 ATG M
	CCA P	AAC N	GNG	TCT	234 GTG ATG V M
	AAG K	AAG AAC 1	GAN	ATC I	GTG V
υ.	AAC N	63 GGG G	117 GCT A	171 AGG R	225 CCT P
	ATC I	63 ' GCT GGG A G	TGT C	999	CTA L
	5' NNC ATC AAC AAX X I N K	CCT	AAG K	GCT A	GGA G
	5.				

FIGURE ?

P	-					
54 AAT N	108 CTC L	162 TTG L	216 CCC P	270 CGA R	324 AGT S	378 CCT P
AGA R	AAA K	GAG	AAC	GTG V	AAC N	AAT N
CAC H	TCA	GAA E	GAA	GAG E	GAA E	GCA
45 GAC D	99 TCA S	153 AGA R	207 GTA V	261 GGA G	315 TTA L	369 FAT Y
ATA I	AGA R	GAT D	TAT	IvIvr F	3CA	:AG
ATC	ATC	GTG V	AGG R	3AG E	ACT [ATA I
36 ATC I	90 TCT S	144 AGG R	198 AGG R	252 CTG L	306 TTC F	360 I'I'I F
ATT I	AGG R	CGC R	ACA T	CAG 2	STA V	CGT R
GAC	TGC	GTA V	T'I'T F	CTC	I'CA S	3AC D
27 CAT H	81 CTG L	135 GTA V	189 GGA G	243 CTG L	297 AAC N	351 GAA E
CAT H	GCA	GGT G	GCT A	GAA E	TGT	AGC S
AAA K	GAG	GTT V	TCT	AAT N	GCT A	
18 GAC D	72 GCA A	126 ATT I	180 ATT I	234 TAC Y	288 AGG	342 ATT I
CTG	GAT D	ACA GTT T V	TTC	TGC C	CTC L	GAA
TTC	CTG L	ACA T	CCT P	GCC A	AAA K	ATT I
9 TGT C	63 CAG Q	117 AAC N	171 ATG M	225 ATG M	279 CTG L	333 3CA A
9 CTT GCC TGT L A C	CGA R	TCA GAA S E	GTA V		CAA	GAT D
CTT	CCT P	TCA	TCC	AAC N	TCA	GAA E
5.						

FIGURE 3A

7 A	9 A	ο υ	4	m E		
432 TTA	486 TCA S	540 AAC N	594 GGA	648 GCT A	702 GGC G	756 CGT R
GAG	AAT N	₹ ,	Ğ.	AAG K	ACA T	JCC S
AAG K	AT.	A A	CAC	A.A.T	:AG	, 225 A
42. GG G	477 ACT T	531 AAA K	585 GGA G	639 AAC N	593 AAT V	747 STT
ATA I	GAT D	SCC A	ATT I	၁၅	GAT D	3CT
414 GAA TTA E L	CIC	rat K	3TC	'AT	CA	¥.
414 GAA E	468 rtG L	522 FAC	576 3CT	30 GC	84 GT	38 TC
GGT	GAC D	ATT I	ata I	37G /	CT	3AC
TC	GCJ	9 9	ATA I	AGA R	GAC	CTA
405 CAG Q	459 AAG K	513 CAA Q	567 AAG K	621 ATC I	675 I'C'I' S	729 ICA S
TAT Y	AAA K	TGG W	GTG V	ATT I	CAG Q	၁၅၅
၁၁၁	GAA	GAG	AAT N	TCC	GTT V	
396 ATG M	450 AAT N	504 AAG K	558 CAA Q	612 GTG V	666 TGT C	720 AGA R
ACA T	ATA I) 99 9	CAA Q	TAT Y	SAA	AGG R
ACA	CCT P	ATA I	ATA I	CAC H	TCC	GAC
387 GAA E	441 GTG V	95 GG	49 AT	3.A	657 ATA I	711 AAA K
GCA TTT A F	GAA	ATC I	GAT D	ATT I	AAA K	CAT H
GCA	GGA G	TGC	5. GGA GAT A. G D N	AAA K	GAG E	711 AAA CAT AAA K H K

FIGURE 3B

810 TCC S	819 828 837 846 855 864 ATT GAG GCC ATC AAG GTA ATC AAT GTT ATC AAT GCT GCC CAG I E A P I T K V I N V I N A A Q	918 CTA L	972 CAT H	026 3GG 3)80 VTC	.34 .AT
CAT H	GCC A	ATT I	CCC	10 TCA (1(ATA ? I 1	11 3AA A
ATA I	GCT	GAA E	GAT D	CTA	AAT	ATG (
801 CGG R	855 AAT N	909 CTG L	963 GAT D	1017 AGA R	1071 AGC S	125 GCC A
A GCC	ATC	GTG V	GAT D	CGA R	1 TCA S	1 CGG R
ATG	GTT V	CGT R	AAA K	TTG	GTT V	GCT A
792 TCC S	846 AAT N	900 GAC D	954 GCT A	.008 GGT G	062 ATG M	116 ATA (
TCT	ATC	CTA L	GGT G	1 GAT D	CAA O	1 CGG
CAC H	GTA V	GCC	TYPY F	TCT	ACT	CCA P
783 CGA R	837 AAG K	891 Gaa E	945 CAG Q	999 ATG M	053 AAC N	107 CCA (
AGA R	ACC	ACA T	CCA P	TTA L	1 AAA K	GTC V
CAG	ATC I	GTG V	TCA	295	ACA T	GAT D
774 AGC S	828 CCC P	882 CCT P	936 TAT Y	990 GGG G	044 TCA S	098 GAT D
TCC	GCG A	ATG M	TTA L	GTT V	1 CTT L	CTT CTT
GTT V	GAG E	CCC	GAG E	CTT	GTT V	TCC
765 GAA E	819 ATT I	873 AGT S	927 ACT T	981 GAC D	035 TAT Y	089 ATC '
ACT T	ACA T	873 AGT AGT S S	ACC T	AAT	GAA E	CCC .
765 GCA ACT GAA A T E	ATG	GAA	927 AGA ACC ACT R T T	981 GCC AAT GAC A N D	1035 AAT GAA TAT N E Y	1089 ACT CCC ATC T P I

FIGURE 3C

GAG GAA TAC TGG GAC TTT GAT ATT TTT GAA CTG GAG GCT GCC ACC CAC AAT AGG E E Y W D F D I F E L E A A T H N R R I I S T L G L E A A T H N R R I L E A T H N R R R T L CTT GGT CTC AAA ATG TTT GCT CGC TTT GGA ATC TGT GAA TTC TT GGT CTC AAA ATG TTT GCT CGC TTT GGA ATC TGT GAA TTC TT GGT CTC CAC CTC CGC TTT GGA ATC TGT GAA TTC TT GT CTC CGC TTT GGA ATC TGT GAA TTC TT GT CAC TCC CAG TCA AGG CTA AGA TCA TGT CAC TGT CAA TTC TTG TT CAC TCC CAG TCA AGG CTA AGA TTC TGT CAT TAT CAC TCC CAG TCA AGG CTA AGA TCA TGT CAT TAT CAC TCC CAG TCA AGG CTA AGA TCA TGT CAT TCC TCC AAT TCT CAC TCC CAG TCA AGG CTA AGA TTCT AGA CAT TCT GAT GT CAT CAT CAT TAT CAT TCC TCC AAT TCT CAC CAT TCT CAT TCT CAT TCT CAT TAT T	188 AGG	242 TTC	296 AAT N	350 2AT 1	104 VTT	58 GG	12 AT
GAG GAA TAC TGG GAC TTTT GAT ATT TTTT GAA CTG GAG GCT ACC ACC CAC AND E B I F E L E A A T H N N L D F D I F E L E A A T H N N L D F D I F E L E A A T H N N L D F D I F E L E A A T H N N L D F D I F E L E A A T H N N L D F D I F E L E A A T H N N L D F D I F E L E A A T H N N L D F D I F E L E A B T T D C E E L E A A T H N L D I I I E A I I I E A I I I E A I I I I E A I I I I	AT.	1 \$	$\frac{1}{2}$	1. T C	14 A A	14 r G	15 A Z
GAG GAA TAC TGG GAC TTT GAT ATT TTT GAA CTG GAG GCT GCC ACC CACC C	Z z	. <u>2</u> ы	ან ≰	r L	င် ၁	ري آ	TAC Y
GAG GAA TAC TGG GAC TTT GAT ATT TTT GAA CTG GAG GCT GCC ACC E E Y W D F D I F E L E A A T 1197 1197 1206 1215 1251 1251 1260 1269 1278 1278 1287 TTA CAC TGC TCC AAA ATG TTT GCT CGC TTT GGA ATC L I Y L G L K M F A R F G I 1251 1251 1251 1260 1269 1278 1278 TTA CAC TGC TCC AAA ATG TTT GCT CGC TTT GGA ATC L H C S E S T L R S W L Q I I 1305 1314 1325 1314 1323 1332 1341 1359 1366 1377 1386 1395 GCC ACT GCC TTT GCT CGC TTT GGA ATT ATC L H S S N P Y H N S T H S A D 1395 GCC ACT GCC TTC CAC AAT TCT ACA CAT TCT GCT GAT Y H S S N P Y H N S T H S A D 1395 GCC ACT GCC TTT CTC TCC AAG GAG ATA AAG GAA ACT TTA A Y F L S K E R I K E T L 1419 1419 AA T A Y F L S C GC GC GC ACT CAT CAT CAT CTC GCT GAT 1419 AA T A Y F L S C C TC AAC GCA CAT CAT CAT CTC GCT GAT 1449 AA T A Y F L S C C C C C C C C C C C C C C C C C C	CAC	TGT	GAA	GTG V	GAT D	CAC H	TTG
GAG GAA TAC TGG GAC TTTT GAT TTTT GAA CTG GAG GCT GCC E E Y W D F D I F E L E A A 1197 1206 1215 1215 1216 1215 1217 1206 1215 1217 1206 1215 1217 1206 1218 TTA CAC TGC TCC AAA ATG TTT GCT CGC TTT GCA TTA CAC TGC TCC GAG TCA ACG CTA ACG TTA CAA ATT L H C S E S T L R S W L Q I 1305 1314 1323 1332 TAT CAT TCC TCC TAC CAC AAT TCT CAA ATT V H S S N P Y H N S T H S A 1359 1368 1377 1318 1329 1370 1318 1329 1371 1386 1371 1386 1371 1386 1371 1386 1371 1386 1371 1386 1371 1386 1371 1386 1371 1386 1371 1389 1480	1179: ACC	1233 ATC I	1287 ATC I	1341 GAT D	1395 TTA L	.449 GAT D	503 ATT I
GAG GAA TAC TGG GAC TTT GAT ATT TTT GAA CTG GAG GCT E E Y W D F D I F E L E A 1197 1206 1215 1224 CCT TTG ATT TAT CTT GGT CTC AAA ATG TTT GCT CGC TTT P L I Y L G L K M F A R F F 1251 1260 1260 1269 1278 TTA CAC TGC GAG TCA AGG TTA CAA L H C S E S T L R S W L Q 1305 1314 1323 1312 TAT CAT TCC TCC AAT CCC TAC CAA TTT ACA CAT TCT Y H S S N P Y H N S T H S 1359 1368 1377 1370 1413 1422 1440 SAT GCT GCA CTC AAG GAG ATA AAG GAA A L I A A T I H D 1460 AGA ACC ACT CTC CTC CTC CTC CTC CTC CTC CT) 000 €		ATT	GCT	ACT T	orc orc v	1 GCC A
GAG GAA TAC TGG GAC TTT GAT ATT TTT GAA CTG GAG E E Y W D F D I F E L E 1197	GCT	TYTT	CAA Q ·	TCT S	GAA E	GAT D	CTG ,
GAG GAA TAC TGG GAC TTT GAT ATT TTT GAA CTG E E Y W D F D I F E L 1197	1170 GAG E	1224 CGC R	1278 TTA L	.332 CAT H	386 AAG K	440 CAT H	494 3AG (E
GAG GAA TAC TGG GAC TTT GAT ATT TTT GAA E E Y W D F D I F E 1197 1197 1206 1215 CCT TTG ATT TAT CTT GGT CTC AAA ATG TTT P L I Y L G L K M F 1251 1251 1260 1269 TTA CAC TGC TCC GAG TCA AGA TCA L H C S E S T L R S 1305 1314 1305 1314 1323 TAT CAT TCC TCC AAT CCC TAC CAC AAT TCT Y H S S N P Y H N S 1359 1368 1370 GCC ACT GCC TAT TTT CTC TCC AAG GAG AGG A T A Y F L S K E R 1413 1413 1422 1431 3AT GAG GTC GCA CTC ATG GCA ACC D E V A L I A A T 1467 1476 1476 1485 AGA ACC AAC CTG TCC ATG GCA GCC AGA CTC ATG GCA GCC ACT GCA CTC TTC CTG TCT ATG GCA GCC ACT GCA CTC ATG GCA GCC ACC ACT GCA CTC ACC ACC ACC ACC ACT GCA CTC ACC ACC ACC ACC ACT GCA CTC ACC ACC ACC ACC ACC ACC ACC ACC A	CTG L	GCT	TGG W	ACA T	1 ATA I	ATT A	1. AGT (S 1
GAG GAA TAC TGG GAC TTT GAT ATT TTTT E E Y W D F D I F 1197 1197 1206 1215 CCT TTG ATT TAT CTT GGT CTC AAA ATG P L I Y L G L K M 1251 1251 1260 1269 TTA CAC TGC TCC GAG TCA AGA L H C S E S T L R 1305 1314 1323 TAT CAT TCC TCC AAT CCC TAC CAC AAT Y H S S N P Y H N 1359 1360 1377 GCC ACT GC TTC AAT CTC AAG GAG A T A Y F L S K E 1413 1413 1422 1431 3AT GAG GTC GCA CTC ATG GCC D E V A L I A A 1485 AGA ACC AAC TCC TTC CTG AAT GCT 1467 1476 1485	GAA E	Typy	TCA	TCT	AGG R	ACC	3GA S
GAG GAA TAC TGG GAC TTT GAT ATT E E Y W D F D I 1197 1197 1206 CCT TTG ATT TAT CTT GGT CTC AAA P L I Y L G L K L H C S E S T L 1305 TAT CAT TCC TCC GAG TCA ACG CTA L H C S E S T L 1305 1314 1359 1413 1413 1413 1413 1413 1467 1467 1476 A A L I A A A L I A A A C A AGA ACC AAC TCC TCC AAG 1 A A A L I A AGA ACC AAC TCC TTC TC TC TC TC AGA ACC AAC TCC TTC TCC AAG 1 A A A L I A A A L I A A A A L I A A A A L I A A A A L I A A A A L I A A A A L I A A A A L I A A A A A L I A A A A A L I A A A A A L I A A A A A A A A A A A A A A A A A A	1161 TTT F	1215 ATG M	1269 AGA R	.323 AAT N	377 GAG E	431 GCC A	485 GCT (
GAG GAA TAC TGG GAC TTT GAT E E Y W D F D 1197 1197 1197 1206 CCT TTG ATT TAT CTT GGT CTC P L I Y L G L 1251 1305 TAT CAC TGC GAG TCA ACG L H C S E S T 1314 TAT CAT TCC TCC AAT CCC TAC Y H S S N P Y 1359 GCC ACT GCC TAT TTT CTC TCC A T A Y F L S 3AT GAG GTC GCT CAC ATC D E V A L I 1413 1413 1467 1467 1476 AGA ACC AAC TCC TTC ATC 1476 AGA TCC TTC TTTT TTT TTT TTT 1467 1467 1467 1467 1467 1476	ATT I	AAA K	CTA L	CAC H	1 AAG K	GCA A	AAT N
GAG GAA TAC TGG GAC TTT E E Y W D F 1197 1197 1196 CCT TTG ATT TAT CTT GGT P L I Y L G L H C S E S 1314 TAT CAC TGC TCC GAG TCA L H C S E S 1314 TAT CAT TCC TCC AAT CCC Y H S S N P 1359 GCC ACT GCC TAT TTT CTC A T A Y F L 1413 1413 1413 1415 B V A L 1416 A T A S C C C C C C C C C C C C C C C C C C	GAT D	CTC	ACG	TAC Y	TCC	ATC (IGT
GAG GAA TAC TGG GAC E E Y W D 1197 CCT TTG ATT TAT CTT P L I Y L 1251 TTA CAC TGC GAG L H C S E 1305 I S N 1359 I S N 1413 I A S S N 1413 I A S S N 1413 I A S S N I A S S S N I A S S S N I A S S S N I A S S S N I A S S S N I A S S S S N I A S S S S N I A S S S S N I A S S S S N I A S S S S N I A S S S S S S S S S S S S S S S S S S	1152 TTT F	1206 GGT G	260 TCA S	314 CCC P	368 CTC L	422 CTC	476 CTG '
GAG GAA TAC TGG E E Y W 1197 CCT TTG ATT TAT P L I Y 1251 TTA CAC TGC TCC Y H S S S TAT CAT TCC TCC Y H S S S 1359 GCC ACT GCC TAT A Y 1413 SAT GAG GTC GCT D E V A 1467 AGA ACC AAC TCC X TGG ACC AAC TCC X T N S	GAC	CTT	GAG E	AAT N	1 TYPT F	GCA A	TTC (
GAG GAA TAC E E Y 1197 CCT TTG ATT P L I 1251 TTA CAC TGC L H C 1359 GCC ACT GCC A T A 1413 SAT GAG GTC D E V 1467 AGA ACC AAC A T N	TGG ₩	TAT Y	TCC	TCC S	TAT Y	GCT.	rcc ,
GAG GAA E E E CCT TTG P L TTA CAC L H Y H Y H A T AGA ACC AGA ACC AGA ACC AT AGA ACC AGA ACC AT AT AGA ACC AT	1143 TAC Y	1197 ATT I	.251 TGC C	305 TCC S	359 GCC A	413 GTC V	467 AAC N
GAG TTAT Y Y Y A A A A A A A A A A	GAA	$\frac{1}{\Gamma}$	CAC H	L CAT H	ACT T	GAG (E	ACC .
	GAG	CCT	TTA L	TAT Y	GCC	GAT	AGA R

FIGURE 3D

9 E	0 K	4 H	നെ	01.5		
156 AC T	162 AC T	167 TYF F	1720 GAJ E	782 AC1 T	836 TCC S	890 3AA E
ACC T	CGG R	CAC	CTA	\delta \cdot	1 5176	CG
D. J.	'AT	AG.	CA CA	77 1	AT C	T T. S
7 G C	1 1 1	~ X	4 4	, i	Ö	IA I
155 CA Q	161 GA' D	166! AC. T	1719 GC2 A	1773 ATC M	1827 GCT A	.881 CGC R
TTC	AAT N	ATG M	TTG	ACT	TGT C	3CA A
GCC A	AGG R	GAA E	ال دردر	A.A.C.	AAA K	SCT (
48 IG)2 AG	90 74	0.4	4 4	8 E	70
15. T.	16(G	169 AC	17.1 & X	176 AT I	181 AT I	187 TG
9 8	ATG M	ecc A	AAC N	GTG V	CTG	GAG E
GCG A	AAC	TTA L	ATC I	GAA E	ATG M	ATC
1539 CAT H	.593 AAA K	647 GTC V	701 AGC S	755 CAG Q	809 CGA R	863 IGC .
CAC H	1 TYYY F	ATG M	AAC N	AAC N	AAA K	IAC 7
AGC S	ATA [3AC	ilc ,	AA .	TC 7	AG 7
o g	4 Fi	ဆပ	0 <i>5</i>	o E	4 H	υ α
153 3 GA E	158 : AA : N	163 AT	169. TT F	174(GA: D	180(CT2 L	1854 CTC L
ر تا	7GC C	ATT	AAA K	ACT	ACC	CCC
GTG V	AAA K	999 9	AAC N	GAA E	CGG R	CGA R
1521 ' GCT A	575 GAT D	.629 CAG Q	GTC AAC AAA TIT GTC AAC ATC AAC AAA CCC TIG GCA ACA CTA GAA V N K F V N S I N K P L A T L E	737 GGG G	791 AAC N	845 TGC C
ACT T	1 GAT D	1 CGC R	1683 5 CAT GTC H V	AAT N	1 3AG	CCC P
1521 GAC ACT GCT D T A	1575 GGA GAT GAT G D D	1629 CTG CGC CAG L R Q	GAG (1737 GAA AAT GGG E N G	1791 CCA GAG AAC P E N	1845 AAT CCC TGC N P C

FIGURE 3E

1944 . ATC	S Q T D E E K Q Q G L P V M	1962 1971 1980 1989 1998 GAC AGA AAT ACC TGC AGC ATC CCC AAA TCC CAA ATC TCT TTC ATT D R N T C S I P K S Q I S F I	2016 2025 2034 2043 2052 ATC ACA GAC ATG TYT GAT GCT TGG GAT GCC TYT GTA GAC CTG CCT I T D M F D A W D A F V D L P	2106 GAA E	2160 AGA	214 GCT	268 GAA
ريهاي)))	TTC	CTG L	GAC	·, 222	4GA 2	2
ئ خال	5 >	TCT	GAC D	CTG	CCA	7 205	L DOE
1935 CCT	P	1989 ATC I	2043 GTA V	2070 2079 2088 2097 2106 CAG CAT CTT GAC AAC TTT AAA TAC TGG AAA GGA CTG GAC GAA Q H L D N N F K Y W K G L D E	2124 2133 2142 2151 2160 CGG AAC CTC CGA CCT CCT GAA TAG TGG GAG ACA CCA CCC AGA R N L R P P E	2178 2187 2196 2205 2214 CTT TGT TCC TTC GGT CAT TTG GAA TTC CTG AGG GCA GCC AGA GCT	2259 ATA (
4 Tab	7	CAA O	TYTY	AAA K	GAG	, 550 4GG .	2 RGC
1926) ဗ	TCC	GCC	TGG W	<u> 16</u> 6	CTG 1	ATC 1
1926 CAG	a	1980 AAA K	2034 GAT D	2088 TAC Y	:142 TAG	196 TTC	2250 ccG 7
CAG	O O	ეეე	TGG ×	AAA K	GAA E	SAA SAA	300
AAG	×	ATC	GCT	T'I'I F	CCT	TTG (CAG (
1917 GAG	ध	1971 AGC S	2025 ' GAT D	079 AAC N	133 CCT P	187 CAT	2241 GAA (
GAA	ា	TGC C	Typr F	AAC N	2 CCA P	GGT (2; 3CA (
GAT	Q	ACC T	ATG M	GAC	CGA R	THC	TAG (
1908 ACT	E+	1962 AAT N	2016 GAC D	2070 CTT L	124 CTC L	2178 TCC	2232 TAC
CAG	œ	aga R	ACA	CAT H	AAC N	2 TGT	2 CAG
TCT	S	GAC D	ATC I	CAG Q	CGG R	CTT	ITT
1899 TTT	[IL	1953 TTT F	2007 TTC F	2061 ATG M	2115 CTG L		2223, TCC
TAT	>-	GTG	TAC Y	TTA	AAG K	cris	2 IGG
GAA	E Y	1953 CCA GTG TYT P V F	2007 GAT TAC TTC D Y F	2061 GAT TTA ATG D L M	2115 ATG AAG CTG	2169 GCC CTG AAG	2223 2233 2241 2250 2259 2268 CCT TGG TCC TTT CAG TAC TAG GCA GAA CAG CCC CCG ATC TGC ATA GCC TGT GAA

FIGURE 3F

2322	2340 2349 2358 2367 2376	2403 2412 2421 2430	2484	2529 2538	2592	2646	AAA GCT CAA	2754
CAT TAC TGT	GGC CAC TGT AGC CTG GTG CAG GAG CTC TTC AGA AAG	CCT CAG TTT CTG GTA AAA CAC AAG GTC TGG AGT	ST CTA TTG	CTA ATG GCA ATA GGA	G AAC ACT	A AAT TYG		A TAC CGT
2313	2367	2421	2475	2529	2565 2574 2583 2592	2619 2628 2637 2646	2691	2745
CAA TGC	GAG CTC T	CAC AAG G1	AGA GCA TGT	CTA ATG GC	CAT AGA AGG TGC AAT CGC TCA CTT GGG AAC ACT	AAA ATT GAG TAG CAG ATG AAA AAT TAA AAT TTG	TYA TYA AA	AC TTC AA
ATC	CAG	AAA	GAC		CGC 1	ATG P	ATT T	GCC A
2304	2358	2412	2466	2520	2574	2628	2682	2736
GCC ACC	CTG CTG	CTG GTA	GCC AGT	TAA GAA CGG	TGC AAT	TAG CAG	TYA TYY	GCC AAA
GCA	295	TTT	CCT	ACT	AGG	GAG	GTT	AGA
2295 2304 TAA CCT TCT GCA GCC ACC	2349 AGC CTG		2457 GGA CTT	2511 TTC AGC ACT		2619 AAA ATT	2673 TAA AAT	2727 TAC TTC
	TGT	TTG	GAT	ACG	CAT	TTT	AAT	AAA
2286	2340	2394	2448 2457 2466	2502	2556	2610	2664 2673 2682	2718 2727 2736 2745 2754
GGA CAT CAG	CTT GGC CAC	GAC CAC GGT TYG	AAG GGT ATT GAT GGA CTT CCT GCC AGT GAC	CTC TCA: GTT: ACG	ACT TTT TCA CAT	GAC TYC TCT TYT	ATT AAT AAT TAA AAT GTT TTA TTY ATT	TGA ATT CAA AAA TAC TTC AGA GCC AAA GCC AAC TTC AAA TAC CGT
2277	2331	2385	2439	2493	2547	2601	2655	2709
AGC CCA CGG	CAA GTG AGA	GCA CAT GAG	GCC CCT GCA	CAA ACA ATT (TCT TTA GCA	ACT GAG AGT (AAC TTG ATT A	TAT TYY CTA 1
AGC	CAA	GCA	၁၁၅	CAA	TCT	ACT	AAC ,	TAT

FIGURE 3G

TAC ATG ATT CAT TAT GCA TTA CTT GGT ATA CAG ACT TAT	2826 2844 2853 2862 GCA AAT TAA TAA AAT GAC ACT TTT ACT GCA CTA TAG AAA TAT TCA	AAC TIT TCT GAT TGA GGC TAA CTG GAA AAA GCT GGG GTC GTA TITC	2934 2943 2952 2961 2970 AAG GCT TCT ACT GTA TAG AAC CCA GGG CTC TGA AAC AGC	2988 2997 3006 3015 3024 ATG CAC TTC ACA GGT AAC TCC CCA AGG TAA AAC TAG ACT CTC	3051 3060 3069 3078 TTA GGA CTT AAC ACT TYT TYC TAA AAT TYT ATA	3114 3123 3132 TAC TGT TYC TAC AAA ATA TYC CTY	3150 3159 3168 3177 3186 AAG AAC AAA AAT TGA ATA TYT AAT GAA TYG ACA TYY TAT AAC CAA
Š	A.	GTC	TG7	TAC	AAJ	ATA	TAT
2799 3GT ATA	2853 TA TAG	2907 CT GGG	2961 GG CTC	3015 'AA AAC	3069 TC TAA	3123 AC AAA	3177 CA TTT
2790 TYA CIT GG	GCA C	AAA G	CCA G	AGG T	T'T'T T	ITC I	FTG A
2790 GCA TTA	2844 TTT ACT	2898 CTG GAA	2952 TAG AAC	3006 TCC CCA	3060 AAC ACT	3114 FAC TGT	3168 AAT GAA
TAT	ACT	TAA	GTA	AAC	CTT	TTA '	TYTY /
2781 ATT CAT	2835 AAT GAC	2889 TGA GGC	2943 TCT ACT	2997 ACA GGT	3051 TTA GGA	3105 TCT ATT TTA	3159 TGA ATA
CAT	TAA	GAT	GCT	TTC		TAC	AAT '
2772 ATG ATT	2826 AAT TAA	2880 TTT TCT	2934 AAG GCT	2988 ATG CAC	3042 AAA GAA AAG	3096 AAA GTC TAC	3150 AAC AAA
TAC	GCA	AAC	AAG	CTA	252	CCA	AAG
2763 GAC CAA ATT	2817 TTT CAT AAT	2871 TGT ATG TTA	2925 TAA GTG CTA	2979 TCT AGC CGC	3033 FTG TTG GFT	3087 CAA TIT	3141 ATA AAA ACA
GAC	TYY	TGT	TAA	TCT	TTG	ATT	ATA

FIGURE 3H

3240	3G TTC	3294	GAC ATG	3348	CCA GAT		•
	AAG A		CTT G		TTC CC		AAA 3'
3231	GGG AAT CTT TGA TGC CAG AAA TTT ATA AAG AGG	3285	CCT TGA ATA AGC ATA ATA CCA TAA AAA ATG ACA CTT	3339	GTG GTT TYTY	3393	AAA AAA 1
	T		ATC		GIT		
	AAA		AAA		GTG		AAA
3222	CAG	3276	TAA	3330	TTT	384	AAA
(*)	TGC	m	CCA	m	GTA TTT	3384	AAA AAA
	TGA		ATA		CTC		AAG
3213	CTT	3267	ATA	3321	CAT TYY AAA	3375	CTT TTT
()	AAT	(*)	AGC	(*)	TTT	(*)	CTT
	999		ATA		CAT		TIT
3204	TAC GGT	3258	TGA	3312	TCA TTT	3366	ATT AAA CCA
(*)	TAC	ריז	CCT	m	TCA	m	AAA
	ATC		ACA		TTG		ATT
3195	TTT	3249	TTC	3303	TAT	3357	GAA
(*)	CCT GTT TTT	m	ATC TTC	m	rca atg tat	m	AAA AAT GAA
	CCT		TGT		TCA		AAA

FIGURE 3

						•
54 ' AGA R	108 AAT N	162 CAT H	216 ATG M	270 GGG G	324 TTA L	378 TAT Y
CAT H	ACA T	GAC D	A TYPT F	AT.	CA.	AG
GAT D	GCC	A. C	~ ~	₹	Ą	£†
45 ATT I	99 CGG R	15 77 3	20 S	61 TA	15 IT	65 51
GTA	AT	G T2	Z Z	(A.A.	STG 7	3 PAC 0
AT	10 S	, CG.	F	E	₹	AC C
36 ATT I	90	44 CG	98 GC	52 IG)6 YT	9 E
gaa E	136	STT >	3CA A	. AA	GT	ည္ပ
Ĉ ≖	GTG V	C GJ	H CA	4 47	$\sum_{i=1}^{n}$	E. C.
CA H	8 CC 7	135 GC2 A	189 CTC L	243 TAT Y	297 2GG	151 VTA
AAG K	GAA	CTC L	CTY	TGC C	T. A.T.	SAA P
GAT D	GCA A	ATC	CCT	GCT .	AAA 3 K I	VTA O
18 CTT L	72 GAT D	126 GTG V	180 CTT L	234 VIT	11C	42 CC
TYT F	TTC	CAC ACG	GTC V	ATA I	CAG 7	SAA C
TGC	AAC	CAC H	TCA S	S SC)))	AT C
9 GAA E	CAC	117 GAG E	171 3CG A	125 1GC	279 CGC 1 R 8	333 TGT (
CTT	ACT	TCC	GAG	AAT A	GTT V	CAC THE
9 GCC CTT GAA' A L E	CAA O	J J J	GAA (E	GAG A	GAA C	GAT C D H
5			•) H	ЭЩ	9 1

FIGURE 4A

432 GGA G	486 GAC D	540 GCC A	594 ATT I	648 ACC T	702 TCT S	756 GAC D
CTG L	CTC	TAT Y	GTG V	TGT C	4AT V	ATT
CTC L	CI	TAC	CCA	GT	3AC	TCC
423 GAG E	47.7 GAC D	531 3TT V	585 ACC F	539 ?TG	693 649	47 AG
GGT	SCA	99 9	ATC I	AAA K	CA S	A
AAA K) (C)	CAG O	AAG K	AAG K	GAT D	AGG R
414 CAC H	468 AAC N	522 TGG W	576 GTG V	630 CTC L	684 CGT R	738 AGG R
TAC	AAG K	GAG	CAC 1	92.5	AT	AC _
9	GAT D	AAG K	:AG	J. S. T.	Ţ	AG
409 ATC M	459 AGC S	513 GGA G	567 Caa Q	621 TTT F	675 AAG K	729 TAT Y
ATK M	AA.	AAG K	ATC	CAT H	CAC H	AGA R
AGG R	CCC P	AAG K	AGC	AGG R	ATT E	TTC
396 GAA E	450 CTG L	17. 17.	58 AC	12 IT	96 9G	0 K
TTC	GAT D	TGC	999 9	AAA K	AAG K	CAT H
GCC	GCT A	ACA T	TCC	999 9	AAT N	CCT
387 CCA P	_441 CTC L	495 AAT N	549 AAA K	603 GGA G	657 AAT N	711 GAG E
387 GTC AAC CCA V N P	GAA	ATC	CGG R	CAA	GAC D	7 AG ACA G T E
GTC V	AAA GAA CTC GCT GAT C K E L A D L	ACC T	AGA R	ე ე	ACT	CAG Q

FIGURE 4B

810 CGC R	864 AAG K	873 882 891 900 909 918 AAT ATA ATC AAT GCA GCC CAA GAA AAC AGC CCA GTC ACA GTA GCG GAA N I I N A A E N S P V T V A E	972 CAG 2)26 \TG)80 TG	34 CT
CGT R	ACA T	GCG A	CCT (10 CTG A	10 VAT G	11 3CC C
AAT N	ATC	GTA V	TCC	6GC (AAG 1	STYP C
801 CAG	855 CCC P	909 ACA T	963 TAC -Y	.017 GGA G	071 ACT , T	125 GAT (D
CTG	GCT A	GTC V	CTG] GTT V	1 TYY F	1 AAT N
AGC S	GAG	CCA	GAA E	CTT	GTG V	ATC
792 CCA P	846 ATC I	900 AGC S	954 ACA T	.008 GAT D	062 TAT Y	116 ACC T
GCA A	ACC	AAC N	ACC	1 AGT S	GAG E	1 ATA I
GAT D	ATG M	GAA	CGG R	ACC	AAC N	CCA
783 AGT S	837 TCC S	891 CAA Q	945 TTA L	999 CAC H	.053 GGA G	107 ATG M
)))	CAC	₽	ATT I	CCC DD	1 TCA S	1 GCA A
CGA R	ATC I	GCA A	GAG	GAT D	CTG L	CTT
774 TCT S	828 AGG R	882 AAT N	936 CTA L	990 GAA E	044 AGA R	098 CAC H
TCA	GCG A	ATC I	GTT V	GAT D	1 AGA R	1 AGT S
ATA I	ATG M	ATA I	AGA R	AAA K	TTG	CAC H
765 TCG \$	819 TCC S	873 AAT N	927 GAC D	981 ACC T	035 GGC G	089 AGT S
AAA K	CCG P	ATA I	TTG	GGT	GAC D	1089 CAG AGT Q S
765 GTG AAA TCG V	TAT CCG Y P	GTT	927 GCC TTG GAC A	CTG L	1035 ACT GAC GGC T D G	CAC (

FIGURE 4C

TGT ATC TCT CAA TTA CTT GAT AAT GAG GAG AGT TGG GAC TTC AAC ATC TTT GAA C I S Q L L D N E E S W D F N I F E E I S W D C TT AAC ATC TTT GAA C GAT GAG CAT AAA AGG CCA TTG GAT TTA GAG CTT AAC CTT CAG TTT CTG GAA GCC ATT ACG CAT AAA AGG CCA TTG GTT TTA CTG GAC TTT CTG GAG CTT AAG GTC TTC CAG TTT CAG GTT TTA AAC TGTT TTA CTG GTT TTA CTG GAC TTT CAG GTC TTC CAG TTT CAG GTT TTA CTG GAC TTT CAG GTT TTA CAG	~	_		01.63									
TGT ATC TCT CAA TTA CTT GAT AAT GAG GAG TGG GAC TTC AAC ATC TTT CT TTA CTT GAT AAT GAG GAG TGG GAC TTC AAC ATC TTT CT CAA TTA CTT GAT GAT TGG GAC TTC AAC ATC TTT CT CAA GAT TGG GAC TTA CTG GAT TA CTG TA CTG TTC CAA CTG TTC CAA CTG TTC CAA CTG TTC CAA CTG TA CTG	1188	GAZ	Ŀ	1242 TTC	F 1296	000 ∀	1350 TCC	c)	1404	R 8	1458	ACA T	.512 GGC G
TGT ATC TCT CAA TTA CTT GAT AAT GAG GAG AGT TGG GAC TTC AAC ATC CC I S Q L L D N E E S W D F N I 1197 TTG GAA GCC ATT ACG CAT AAA AGG CCA TTG GTT TAT CTG GGC TTA AAG L E A I T H K R P L V Y L G L K 1251 1251 1260 1269 1276 1276 1276 1276 1277 1278 1278 1278 1279 1270 127		TT	[Z	GTC :	>	9 9 9	AAC	Z	ر ا	ਨ ਵ		GCC A	GCA A
TGT ATC TCT CAA TTA CTT GAT AAT GAG GAG AGT TGG GAC TTC AAC C I S Q L L D N E E S W D F N 1197 1197 1206 1215 1216 1215 1224 1233 TTG GAA GCC ATT ACG CAT AAA AGG CCA TTG GTT TAT CTG GGC TTA L E A I T H K R P L V Y L G L 1251 1260 1269 1278 TCT GG TTT GGA GTA TGT GAT TTT GAA ACC ACT S R F G V C E F L N C S E T T 1305 1314 1329 1316 1317 1318 1329 1319 ACC CAT GC GC GC GC GC GC GC TTC GC TTC GC TTC 1318 ACC CAT GC GC GC GC C C C C C C C C C C C C C		ATC	H	AAG	~	ונים. בי	CAC	Н	700	X	(AAT O
TGT ATC TCT CAA TTA CTT GAT AAT GAG GAG AGT TGG GAC TTC C I S Q L L D N E E S W D F 1197 TTG GAA GCC ATT ACG CAT AAA AGG CCA TTG GTT TAT CTG GGC L E A I T H K R P L V Y L G 1251 1250 1260 1269 1278 TCT CGG TTT GAA GTA TTAT CTG GGC S R F G V C E F L N C S E T 1305 1314 1323 TGG TTC CAA GTG ACC AAC TCC TTC GAA ACC N F Q V I E A N Y H S S N A 1359 1359 1368 1377 1413 1422 1413 1422 1440 1467 1467 1467 1476 1485 1485 177 1869 187 187 187 187 187 187 187 18	1179	AAC	Z	1233 TTA	ь 1287	ACT T	1341 TAC	×	395	; 5	449	A'I'I' I	503 TGC .
TGT ATC TCT CAA TTA CTT GAT AAT GAG GAG AGT TGG GAC I S Q L L D N E E S W D 1197 1206 1215 1224 TTG GAA GCC ATT ACG CAT AAA AGG CCA TTG GTT TAT CTG L E A I T H K R P L V Y L 1251 1251 1260 1260 1260 1260 1260 1278 TCT CGG TTT GGA GTA TGT GAG TTT TTA AAC TGT TAT CTG S R F G V C E F L N C S E 1310 1314 1325 1314 1329 1368 1377 1370 1386 ACC CAT GC GAC GC GC GC TTC TTT TTA AAC TGT TCT GAA S R F G V C E F L N C S E 1310 1310 1314 1329 1369 1368 1370 1370 1386 ACC CAT GC GAC GC GC GC TTC TTT TTA 1386 ACC CAT GCT GAG GTC TTC TTT TTA 1386 ACC CAT GCT GAC GTC CTG GAC GCC GCT TTC TTT 1413 1410 1413 1422 1431 1440 1440 1467 1467 1476 1485 1494 17 P C GAA TCC GAA TCC GAA TCC TTT TTT TTA 1486 1494 1400		TTC	ĮŢ.	99 (ACC T	occ 1	Æ	1 ملمان		1	י ני	CTC (
TGT ATC TCT CAA TTA CTT GAT AAT GAG GAG AGT TGG C I S Q L L D N E E S W 1197	•	GAC	Ω	CTG		GAA E	AAT	Z	الملما		Ç)) ()	FIC (
TGT ATC TCT CAA TTA CTT GAT AAT GAG GAG AGT C I S Q L L D N E E S 1197 1197 1206 1215 TTG GAA GCC ATT ACG CAT AAA AGG CCA TTG GTT L E A I T H K R P L V 1251 1260 1260 1260 1270 1270 1280 1314 1314 1313 1315 1315 1318 ACC CAT GAA GCC AAC TCT GTT N F Q V C E F L N C 1318 ACC CAT GAA GTC AAC TCT N F Q V I E A N Y H S 1319 ACC CAT GCT GAC GTC CTC CC CC CC CC 1360 1368 1370 1413 1413 1413 1413 1413 1413 1413 1413 1414 1416 1416 1416 1416 1416 1417 1416 1416 1416 1417 1416 1417 1417 1418 1	1170	766	3	1224 TAT	Y .278	ICI S	332 TCC	ß	386 TTC		440	N A	194 ICT :
TGT ATC TCT CAA TTA CTT GAT AAT GAG GAG C I S Q L L L D N E E 1197 1197 1206 1215 TTG GAA GCC ATT ACG CAT AAA AGG CCA TTG L E A I T H K R P L 1251 1250 1250 1250 1260 1269 TCT CGG TTT GGA GTA TGT GAG TTT TTA ACC S R F G V C E F L N 1305 1314 1329 1368 1377 ACC CAT GCA GCC ACC GAC CAC CAC F H A A D V L H A T 1413 TGG CTC GAC GCC ACC GAC CAC CAC F H A A A D V L H A T 1413 TGG CTC GAC GCC GAC GCC GCC ACC F H A A A D V L H A T 1413 TGG TTC CGG TTG GAC GCC GAC GCC F H A A A D V L H A T 1413 TGG CTC GAC GCC CAC GAC GCC F H A A A D V L H A T 1413 TGG CTC GAC GCC CAC GAC GCC F H A A A D V L H A T 1413 TGG CTC GAC GCC CAC GAC GCC F H A A A D V L H A T 1413 TGG CTC GAC GCC CAC GAC GCC F H A A A D V L H A T 1413 TGG CTC GAC GCC CAC GAC GCC F H A A A D V L H A T 1413 TGG CTC GAC GCC CAC GAC GCC F H A A C CTC GAC CAC GCC F H A A A D V L H A T 1413 TGG CTC GAC GCC CAC GAC CAC GCC F H A A A D V L H A T 1413 TGG CTC GAC GCC CAC GAC CAC GCC F H A A B C CTC GAC CAC CAC GCC F H A A B C CTC GAT CAC TTC GAT CAC CAC GCC F H A A B C CTC GAT CAC TTC GAT CAC CAC GCC F H A A B C CTC GAT CAC TTC GAT CAC TTC GAT CAC CAC GCC GCA ACC CAC GCC GCA ACC CAC GCC GC	•	AGT	ഗ	GIT 1	>	.IGI. C	1 TCT	S	1 GCT	A.	1	5 >	AAC 3
TGT ATC TCT CAA TTA CTT GAT AAT GAG C I S Q L L D N E 1197 1197 1251 TTG GAA GCC ATT ACG CAT AAA AGG CCA L E A I T H K R P 1251 1251 1251 1250 TCT CGG TTT GGA GTA TGT GAG TTT TTA S R F G V C E F L 1305 1316 1316 1317 ACC CAT GCC GC		GAG	ப	TTG		N N	CAC	H	ACC	E-	(у Э	ACC I
TGT ATC TCT CAA TTA CTT GAT AAT C I S Q L L L D N 1197 1197 1206 L E A I T H K R 1251 TCT GGA TTT GGA GTA TGT GAG TTT S R F G V C E F 1305 1314 1305 1314 1359 1359 1413 ACC CAT GCT GAC GAC CAC N I E A N 1359 1413 1413 1413 1413 1467 1560 1660 1660 1760	1161	GAG	ET)	1215 CCA	269	ITA L	323 TAC	>	377 GCC	Æ	431		485 AGG , R
TGT ATC TCT CAA TTA CTT GAT C I S Q L L L D 1197 1197 TTG GAA GCC ATT ACG CAT AAA L E A I T H K 1251 TCT CGG TTT GGA GTA TGT GAG S R F G V C E 1305 1305 1314 TGG TTC CAA GTG ATC GAA GCC W F Q V I E A 1359 ACC CAT GCT GCC GAC GTC CTG T H A A A D V L 1413 3TA AAG GGA AGC CTC GAT CAG / K G S L D Q 1467 1467 1476 1476 1476 1476 1476 1476 1476 1476	• •	AAT	z	AGG	χ.		AAC	Z	CAC	=	1 TMP:	21 7	3GA .
TGT ATC TCT CAA TTA CTT C I S Q L L L L E A I T H L E		GAT	Ω	AAA	4 (GAG E	သည	æ	CTG		ر ر ر) 500
TGT ATC TCT CAA TTA C I S Q L L S Q L L I S Q L L I S Q L L L E A I T T TC GAA GCC ATT GGA GTA S R F G V I I S Q V I I I S Q V I I S Q V I I I S Q V I I I S Q V I I I S Q V I I I S Q Q I I I S Q Q I I I S Q Q I I I S Q Q I I I S Q Q I I I S Q Q I I I S Q Q I I I S Q Q I I I S Q Q I I I S Q Q I I I S Q Q I I I S Q Q Q I I I S Q Q Q I I I S Q Q Q Q	1152	CTT	L	206 CAT	н 260	C C	314 GAA	ഥ .	368 GTC	>	422 Gam		476 CAC (
TGT ATC TCT CAA C I S Q 1.197 TTG GAA GCC ATT L E A I 1.251 TCT CGG TTT GGA S R F G I 305 TGG TTC CAA GTG W F Q V I 1359 ACC CAT GCT GCC I H A A A I 413 STA AAG GGA AGC I H A A A I 413 STA AAG GGA AGC I H A A A I 413 STA AAG GGA AGC I H A A A I 413 STA AAG GGA AGC I H A A A I 413 STA AAG GGA AGC I H A A A I 413 STA AAG GGA AGC I H A A A I I 467 I H D V		TTA	宀	ACG		STA V	1 ATC	Н	1 GAC	Ω	ر مہار	,	. 1, SAT (D
TGT ATC TCT C I S 1.197 TTG GAA GCC L E A 1.251 TCT CGG TTT S R F 1.305 TCG TTC CAA W F Q 1.359 ACC CAT GCT T H A 1.413 STA AAG GGA / K G / H D		CAA	O.	ATT	→	¥ე ე	GTG	>	ည	Æ	ر 4	S S	STG V
TGT ATC C I TTG GAA L E TCT CGG S R ACC CAT T H T H STA AAG ' K ' K ' H ' H ' H ' H ' H ' H	1143	TCT	ຜ	.197 GCC	A 251	F	305 CAA	a	359 GCT	Æ	413 36A	(2)	467 3AC (
TGT C C C TTG TTG TTG N N N N N N N N N N N N N N	· ¬	ATC		GAA	ਬ (ان ان	1 TTC	E4	CAT	II.	AAG (<u> </u>	CAT (
		TGT	ပ	TTG	_a	S.	TGG	3	ACC	E	GTA	>	GTC (

FIGURE 4D

						•
1566 C ACC T	1620 3 AAT N	1674 : TTG L	1728 : ATC I	1782 GCT A	1836 TGT C	1845 1854 1863 1872 1881 1890 GCT GAC GTG GCC AAC CCA TGC CGC CCC TTG GAC CTG TGC ATT GAA TGG GCT GGG A D V A N P C R P L D L C I E W A G
CAC	AA(K	GТ ^Л	AGC S	CCT	AAG	3CT A
, CAC H	TTC	ATG M	AAC N	AAC	ATT	TGG 6
1557 3 AGT S	1611 ATT I	1665 GAC D	1719 GTG V	1773 TGC C	.827 ATG M	881 GAA
GAC	AAC N	ATY I	I'I'I' F	GAA	ATG	1 ATY I
CTG	TGC	ATT	AAG K	TGT	, 262 8	
1548 GTT V	1602 AAA K	1656 GCT A	1710 AAT N	.764 GAC D	8-18 AAA K	872 CTG 7
, GCT	ACC T	CAG	GTG V	AGC S	ATC I	GAC O
ACT T	GAC	CGC R	CAT H	ე ექ	CTG L	TTG .
1539 GAC D	1593 AAG K	1647 CTG L	1701 GAA E	.755 GAA E	809 ATC I	863 CCC 1
AAT N	GTC V	ACG	TYPT F	1 ATT I	caa Q	CGC R
TAC Y	ACG	CGA R	CAC H	GAG E	A.A.C.	200
1530 CTT L	1584 CTC L	1638 TAT Y	1692 AAA K	.746 GCT A	800 GAA E	854 CCA '
· GTG V	CAG Q	CAT	ACA	GCA A	CCT P	AAC N
GCT	TTC	AAC	ATG M	ATG M	TTC	GCC A
1521 CTT L	1575 GCC A	1629 AGG R	1683 GAG E	.737 CCA P	.791 AAC N	845 GTG V
GAG E	CTG	GAC	ACA T	J AAG K	1 AAG K	1 GAC D
AGT	GCC	ATT I	GCA	AAC N	999 9	GCT A

FIGURE 4E

1944	GAG GAG TAT TTT GCA CAG ACT GAT GAA GAG AAG AGA CAG GGA CTA E E Y F A Q T D E E K R Q G L	1962 1971 1980 1989 1998 ATG CCA GTG TTT GAC CGG AAT ACC TGT AGC ATC CCC AAG TCT CAG M P V F D R N T C S I P K S Q	2007 2025 2034 2043 2052 ATC TCT TTC ATT GAC TTC ATA ACA GAC ATG TTT GAT GCT TGG GAT GCC TTT I S F I D M F D A W D A F	2106 AAG K	2115 2124 2133 2142 2151 2160 ACA CTA GAT GAC CTA AAG TGC AAA AGT TTG AGG CTT CCA TCT GAC AGG TAA AGC T L D D L K C K S L R L P S D S	2214 AGC	2268 GCT
	75 25	TCT S	GCC A	TGG W	TAA	AGT	gg Y
	CAG	AAG K	GAT D	CAC H	AGC S	CAC	GAA (
1935	AGA R	1989 CCC P	2043 TGG W	2097 AAA K	:151 GAC D	205 AAT	259 GGT
	AAG K	ATC	GCT A	TAC Y	2 TCT S	2 GTG	2 ATT
	GAG E	AGC S	GAT D	AAC N	CCA	ACT (GGT 1
1926	GAA E	1980 TGT C	2034 TTT F	2088 GAC D	1142 CTT L	196 GAC	250 ACA (
	GAT D	ACC	ATG M	GCT A	AGG R	2 AAG	2 ATG
	ACT T	AAT N	GAC D	TTG	TTG	ACA	ACA ,
1917	CAG Q	1971 CGG R	2025 ACA T	2079 CAT H	1133 AGT S	187 CCG	241 ATG
	GCA A	GAC	ATA I	CAA	AAA K	2 TGA	2 CTA
	TTT	TYTY	TTC	ATG	TGC	TCT	I'I'T
1908	TAT Y	1962 GTG V	1016 TAC Y	.070 CTG L	124 AAG K	178 GCC	232 TCC '
. ,	GAG	CCA P	GAC D	GCC A	2 CTA L	999	2 CCT
	GAG E	ATG M	ATT I	CCA P	GAC D	GAG	AGG
1899	TCT S	1953 GTG V	1007 TTC F	.061 CTG L	115 GAT D	169 ACA	223 GAG
•	ATC I	1953 CCT GTG GTG P V V	, TCT S	2 CAT H	. 2 CTA L	gcc	AAC (
	AGG ATC TCT R I S	CCT	ATC I	GCA A	ACA T	CAA	2223 2233 2241 2250 2259 2268 GTA AAC GAG AGG CCT TCC TTT CTA ATG ACA ATG ACA GGT ATT GGT GAA GGA GCT

FIGURE 4F

Docket No.: PF-0057-4 CON Inventors: Au-Young et al. Title: CyclicNucleotide Phosphodiesterases Serial No.: To Be Determined

2322 TTA GAA	2376 CAG AAC	2430 TCA ATC	2484 GGT GCC	2538 AGC TCA	2592 CAA GAA	2646 AAA AAA	
		TTG T	CTT G	ATC AG	CCT CA	CTA AA	
2313 CAA ATT TCA TTC	2367 AAT ACT TAA TGA	2421 GTA CCC '	2475 CAA AGC (2529 CTA GTG A	2583 TGT TYT C		
		TCT	AAG	TAG	GAC 1	CAG A	
2304 TCA AGT CCC	2358 CIT ITG	2412 TCA TCC	2466 CAC AGG	2520 GTA GCT	2574 TAG CTT	2628 2637 TCT GAA CAG ATT TAT	•
TCA	GTT	CTG	299	TAA	GTT '	TTA ?	•
2295 TTG AAT CAT	2340 2349 TGA AGA AAA ATA TAT GTT	2394 2403 AAC TCC TTT GCT CTG CTG	2457 TAA CTA GCA GGC	2502 2511 2520 TCC CAG GAT GGT GAC TAA GTA GCT	2565 ATT GCT	2619 AGG AGC	
TTG	AAA	TTT	TAA	GAT	ATC	ATA	
2286 TTG ACC	2340 TGA AGA	2394 AAC TCC	2448 TCA CTG	2502 FCC CAG	2556 AAA GTC	2610 GGA TTC	
TAT	CCA	GCA	GGT	ATC ?	ATA 1	GAA (AA 3.
2277 AAT GTT TAA	2331 AGT TAT GTT	2385 AAA TAC TYG	2439 CAT GGA GCT	2493 TGT GAG CTC	2547 TCC TTT ACC	2601 CAT CGA TCT (2655 AAA AAA AAA 1
AAT	AGT	AAA	CAT	TGT	JOL	CAT	AAA

FIGURE 4G

FIGURE 5A

L D T I N T C I K K E W Q G V Y Y A R R K S G D S I Q Q H V K I T P V I G	FRYKNRRKESIDVKS	I E A P I T K V I N V I N A A Q E S S P M P V T E A L D R V L E I L R T T E L I E A P I T K V I N I I N A A Q E S S P M P V T E A L D R V L E I L R T T E L I E A P I T K V I N I I N A A Q E S S P M P V T E A L D R V L E I L R T T E L	SOITGLKKIVH
---	-----------------	---	-------------

FIGURE 5B

NSFLCNAGSELAILYNDTAVLES
LDNYSDRIOVLRNMVHCADISNPTKDIETVDOMPHA
LDNYSDRIQVLRNMVHCADLSNPTKPIFIVROWPDRTMAR
MON Y THE THE THE WALL AND THE STREET WANTED TO THE WORLD

FIGURE 5D

•			•
(E)	(E) (E)	(E) (E) 52	E 22
PDE8A (E) PDE8B (E) PDE8A PDE8B 9DE8B	PDE8A (E) PDE8B (E) PDE8A PDE8A	PDE8A (E) PDE8B (E) PDE8A PDE8A PDE8B	PDE&A (E) PDE&B (E) PDE&A PDE&B 91705952
		PDE8A PDE8B PDE8A PDE8B 917059	PDE8A (E) PDE8B (E) PDE8A PDE8B 91705952
I Т I Т I Т V Н		•	A
	R P P P	£ -	A S
0	N S N G	ت ۔	€ -
I H H I H	C K K R S	ь В	ð
Q I S Q I S Q I S	M K L R N L R L K C K S L R M K L R N L R I R O S P S P		L X
0 8 0 8	LDEMKLRNLR LDDLKCKSLR LDEMKLRNLR HSAIROSPSP	고 고	ਜ਼ ਨ
P K S P K S E K S	L D E L D E H S A	S Q	, A
I P I P I P	K G L K G L	<u>ਜ</u>	回
C S C S C S A S	KYWKGLDEMKLRNLRPPRKHWKTLDDLKCKSLRLPKYWKGLDEMKLRNLRPPNRDWYHSAIROSPSPPL	মে	>
H H H	Q H L D N N F K Y W K G Q H L D N N Y K H W K T O H L D N N F K Y W K G I L D T L E D N R D W Y	<u>ਜ਼</u>	TTVVEVAERLKQETAS
R R R R R R R R R R R R R R R R R R R	DLMQHLDNNFK ALMQHLADNYK DLMQHLDNNFK AQDILDTLEDN	1 E	о С
	H L D N N H L D N N H L D N N L D T L E	LT	c
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ជ	ΚVΚ
ΣΣΣΙ	H O H	Q Fi	ა ჯ
P V V P V V P V V V P P V V V P P V V V P P V V V P P V V V P P V V V P P V V V P P P V V V P P P V V V P P P V V V P P P V V V P P P V V V P P P V V V P P V V V P P V V V P P V V V P P V V V P P V V V V P V	DLMO DLMO AQDI	저 단	Z D
M L L L L L L L L L L L L L L L L L L L	DA D	<u>.</u> Д	>
00000	4 1 1 d	г ь	0 A
OK OK B	D A D H D	ያ ያ	R A
E E E E E E E E E E E E E E E E E E E	A F A F D L	五	Æ
田田田田民	D D D	1 G	<u>០</u> ទ
G T T D G T T D	A W W T	_ອ ອ	A A
S 内 S O O O O	T T Z Z	വ ല പ	ı
*	E E E		F.
38 . 38 . 35 . 35 . 35 . 35 . 35 . 35 .	5 8 4 0 0 0	2.00 4.00 Manage Ma	ധയാ 44 പ
	· -		

FIGURE 5E

•						
	g1705952 PDE&A(E)	PDE8B (E) PDE8A	PDE8B g1705952	PDE8A (E)	PDE8B (E) PDE8A	PDE8B
	CSFSFEAPGLLGL	OA .	HLAATRACSACSGTSGDNSAIISAPGRW	ICIA .	ECIA	SOLA .
ር ረ	>		PRD			
≽	:		E A			
بر در			Э >			P A
C d			æ			Q
4	;		T A			S S
5			P S			G S
13 149 124	51 81	£ 1		E 8	라 _	4

FIGURE SF

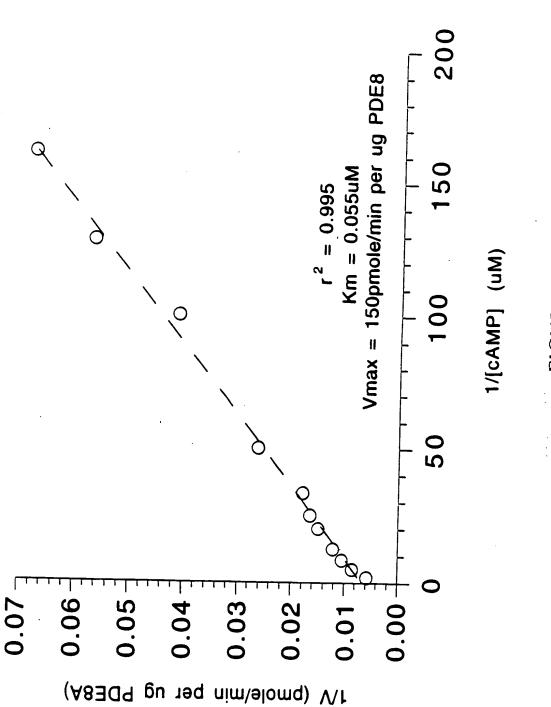


FIGURE 6

